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Sir:

Transmitted herewith for filing is the patent application of

Inventor(s): ITO, Wataru

For: METHOD, SYSTEM AND RECORDING MEDIUM FOR IMAGE PROCESSING

Enclosed are:

_X_   A specification consisting of <u>22</u> pages

_X_   <u>04</u> sheet(s) of <u>Formal</u>   drawings

_X_   An assignment of the invention

_X_   Certified copy of Priority Document(s)

_X_   Executed Declaration   _X_ Original   ___ Photocopy

___   A verified statement to establish small entity status under 37
      CFR 1.9 and 37 CFR 1.27

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_X_   Information Disclosure Statement, PTO-1449 and reference(s)

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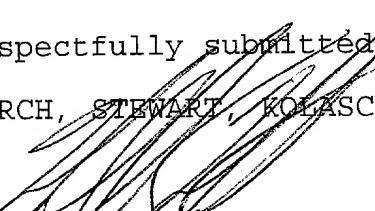
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METHOD, SYSTEM AND RECORDING MEDIUM FOR IMAGE PROCESSING

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to an image processing method and an image processing system for carrying out image processing on image data according to the content of the processing described by a sensation expression such as "sharp" or "soft", and also to a computer-readable recording medium storing a program to cause a computer to execute the processing in the image processing system.

Description of the Related Art

A printing service for generating postcards, calendars, T-shirts and the like using photographs obtained by a user has been known. In such a service, a negative film or a print deposited by a user is digitized in a laboratory and printing is carried out after image processing desired by the user is carried out. As the image processing in this case, layout determination, trimming, and combining the image with characters, as well as tone processing, color conversion processing and the like can be listed. In order to carry out such processing as the user wishes, the following method has been known. In this method, the image data obtained in the laboratory are provided to the user and the user carries out desired image processing on his/her personal computer by using predetermined software, while viewing the image. The content

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of the image processing is recorded in a recording medium or transferred to the laboratory via a network, and the laboratory carries out the processing on the image data, based on the content of the processing generated by the user. At this time, in order

5 to exchange the image data, a large-capacity recording medium such as an MO disc or a ZIP disc is used. In order to exchange image data via a general recording medium such as an FD, a printing method in which image data at a low resolution are provided to a user and image data at a high resolution are

10 processed only in a laboratory has been proposed (Japanese Unexamined Patent Publication No. 10(1998)-200730).

Meanwhile, an impression of an image can be expressed by using a sensation expression such as "sharp", "soft", "warm", and "cold". In this case, in order to search a plurality of

15 images for a desired image corresponding to a sensation expression, a search apparatus has been proposed (Japanese Unexamined Patent Publication No. 9(1997)-114853). In this apparatus, a plurality of images are related to characteristic values representing the content of processing based on sensation

20 expressions of the images and recorded therein. The characteristic value corresponding to the user's sensation expression is calculated based on the sensation expression, and the image is searched for according to the characteristic value having been calculated.

25 In the printing method described above, users wish to carry out image processing for changing impressions of images

according to sensation expressions such as "sharp", "soft" and "bright". In this case, an image on which image processing according to a sensation expression has been carried out can be obtained. As has been described in Japanese Unexamined Patent Publication No. 9(1997)-114853, images and the characteristic values are related to each other and correspondence between a sensation expression and the content of image processing represented by the sensation expression is found. According to the content of the image processing having been found, the processing is carried out on image data. Furthermore, as in a method described in Japanese Unexamined Patent Publication No. 10(1998)-200730, the content of the image processing corresponding to the sensation expression may be transferred to a laboratory so that printing is carried out after the processing is carried out on image data.

However, an impression of an image is different between output media such as a monitor of a personal computer owned by a user and a print generated in a laboratory, even if image processing according to the same sensation expression has been carried out on the image. For example, a monitor is a medium using light emission and a print is a medium using light reflection. Therefore, an impression of an image becomes different between the two media, even if the same image processing has been carried out on the image. Furthermore, even if the same image processing has been carried out, a glossy print looks sharp while a print on matt photographic paper looks soft.

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Moreover, the impression of an image is different between viewers and between environments in which the image is viewed.

SUMMARY OF THE INVENTION

The present invention has been conceived based on consideration of the above problems. An object of the present invention is therefore to provide an image processing method and an image processing apparatus for carrying out image processing according to a sensation expression without changing a sensational impression of an image even if an output medium and an image viewing condition change, and to provide a computer-readable recording medium storing a program to cause a computer to execute the image processing method.

An image processing method of the present invention comprises the steps of:

instructing editing according to a sensation expression of an image;

generating a general sensation expression script based on the editing instruction; and

obtaining processed image data by carrying out image processing on image data representing the image, based on the general sensation expression script.

The "editing instruction according to a sensation expression" means the content of an editing instruction on an image for enhancing sharpness, emphasizing softness, or increasing brightness based on a sensation expression such as "sharpness", "softness", "warmth", "coldness" or "brightness",

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for example.

The "general sensation expression script" means a script representing the content of the editing instruction and excluding an effect caused by a variance of image impression due to a sensation of a person generating an editing instruction for an image or a condition of viewing the image for which the editing instruction is being generated, (hereinafter, called an editing environment), and the like.

It is preferable for the image processing method of the present invention to carry out image processing on the image data, based on an output condition used at the time of outputting the processed image data.

The "output condition" herein referred to means a condition affecting an impression of an output image, such as a characteristic of an output medium used for outputting the processed image data, the editing environment, and a characteristic of each viewer of the output image.

An image processing system of the present invention comprises:

editing instruction means for instructing editing for an image, based on a sensation expression of the image;

script generating means for generating a general sensation expression script based on the content of the editing instruction; and

image processing means for obtaining processed image data by carrying out image processing on image data representing the

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image, based on the general sensation expression script.

In the image processing system of the present invention, it is preferable for the image processing means to carry out image processing on the image data based on an output condition used at the time of outputting the processed image data.

An editing instruction apparatus of the present invention comprises:

editing instruction means for instructing editing for an image based on a sensation expression; and

script generating means for generating a general sensation expression script based on the content of the editing instruction.

An image processing apparatus of the present invention comprises image processing means for obtaining processed image data by carrying out image processing on image data representing the image, based on the general sensation expression script obtained by the editing instruction apparatus of the present invention.

In the image processing apparatus of the present invention, it is preferable for the image processing means to carry out image processing on the image data based on an output condition used at the time of outputting the processed image data.

The processing carried out by the image processing system of the present invention may be provided as a program recorded in a computer-readable recording medium to cause a computer to execute the processing.

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According to the present invention, the general sensation expression script is generated based on the content of the editing instruction according to a sensation expression, and image processing is carried out based on the general sensation expression script. Therefore, image processing can be carried out on the image data according to the content of the image processing excluding a variance of how the image looks depending on the editing environment. In this manner, it is possible to obtain the processed image data representing the image not affected by an impression of the image depending on the editing environment.

Furthermore, by carrying out image processing based on the output condition at the time of outputting the processed image data, the processed image data representing the image giving the same impression as at the time of editing can be obtained by considering a characteristic of the output medium to output the processed image data, the viewing environment, and a characteristic of each viewer of the output image, for example.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a block diagram showing an outline configuration of an image output system according to an embodiment of the present invention;

Figure 2 is an illustration showing a monitor screen at the time of instructing editing;

Figure 3 is an illustration showing en example of a general sensation expression script;

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Figure 4 is a flow chart showing an operation of the embodiment of the present invention; and

Figures 5a and 5b are programs using functions carrying out image processing.

DESCRIPTION OF PREFERRED EMBODIMENT

Hereinafter, an embodiment of the present invention will be explained with reference to the accompanying drawings.

Figure 1 is a block diagram showing an outline configuration of an image output system to which an image processing system according to the embodiment of the present invention is applied. As shown in Figure 1, the image output system according to the embodiment of the present invention generates an editing instruction using a sensation expression for image data S0 by using a personal computer 1 of a user, generates a general sensation expression script H based on the content of the editing instruction, transfers the script to a laboratory 2, and outputs an image in the laboratory by carrying out image processing on image data S1, based on the general sensation expression script.

The personal computer 1 comprises editing instruction means 4 for instructing the editing based on the sensation expression for the image data S0 generated by image generating/inputting means 3, input condition setting means 5 for setting an input condition for the image data S0 at the time of instructing the editing by using the editing instruction means 4, and script generating means 6 for generating the general

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sensation expression script H based on the content of the editing

instruction generated by the editing instruction means 4. The

processing carried out by the editing instruction means 4, the

input condition setting means 5, and the script generating means

5   6 is carried out by using a CPU, a memory, and a monitor, according

to a program installed in a hard disc of the personal computer

1.

As the image generating/inputting means 3, a digital

camera for obtaining the image data S0 by photographing, or a

10   computer graphics generating apparatus can be used. The image

generating/inputting means 3 may be a reading apparatus for

obtaining the image data S0 by reading a film brought in by a

user by using a scanner in a laboratory 2. If the image

generating/inputting means 3 is the reading apparatus in the

15   laboratory 2, the image data S0 may be image data at a low

resolution generated by reducing the number of pixels of image

data at a high resolution obtained by reading. In this case,

the image data S0 are provided to the user by being recorded

in a recording medium such as an MO disc, a ZIP disc, a CD-

20   R, or an FD by the laboratory 2. Alternatively, the image data

S0 may be transferred from the laboratory 2 via a network. In

this embodiment, the image data S0 at a low resolution are

generated from the high resolution image data S1 obtained by

a reading apparatus (not shown in Figure 1) of the laboratory

25   2, and the low resolution image data S0 are transferred to the

personal computer 1 of the user via the network. The high

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resolution image data S1 are stored in the laboratory 2.

The editing instruction means 4 generates the editing instruction based on a sensation expression such as "brighter" or "merrier". An input to the editing instruction means 4 is carried out by using input means such as a keyboard and a mouse installed in the personal computer 1. The editing instruction means 4 has a database 4A, and the database 4A stores the content of image processing and sensation expressions related thereto. For example, "sharpness" is related to frequency enhancement processing and hard tone processing, and "coldness" is related to saturation reduction processing and hue changing processing from warm colors into cold colors. "Softness" is related to frequency lowering processing, hue changing processing from cold colors into warm colors, and soft focus processing.

The input condition setting means 5 has correction data for correcting a variance of characteristics of a monitor 4B of the personal computer 1, viewing environments in which the monitor 4B is viewed, and user's sensation expressions. The input condition setting means corrects the image data S0 based on the correction data at the time of instructing the editing.

The script generating means 6 generates the general sensation expression script H having a quantitative character from the sensation expression, based on the editing instruction from the editing instruction means 4 and without considering the correction by the input condition setting means 5. The general sensation expression script H is then transferred to

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the laboratory 2 via the network.   If the image
generating/inputting means 3 is a digital camera or a computer
graphics generating apparatus, the image data S0 and the general
sensation expression script H are transferred to the laboratory

5   2.   In this case, the general sensation expression script H alone
or as well as the image data S0 may be recorded in a recording
medium such as an MO disc, a ZIP disc, a CD-R, or an FD, and
sent to the laboratory 2.

An operation of the editing instruction means 4, the input

10   condition setting means 5 and the script generating means 6 will
be explained next.   Figure 2 is an illustration showing a display
screen of the monitor 4B at the time of generating the editing
instruction.   As shown in Figure 2, an image window 11 for
displaying an image, an instruction window 12 for instructing
the editing, and an OK button 13 for confirming the editing

15   instruction are shown on the monitor 4B of the personal computer
1 at the time of generating the editing instruction.   In the
instruction window 12, a pull-down menu 14 is displayed.   By
clicking the portion shown by the arrow in Figure 2, a menu

20   according to the sensation expressions such as "sharpness",
"cold", "softness", "hardness", "brightness", "merriness",
"lightness", "warmth", and "fineness" is displayed.   By
clicking a desired menu, the menu can be selected.   Buttons 15A
and 15B are displayed below the pull-down menu, in order to change

25   the degree of an effect of the image processing corresponding
to the selected menu.

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The image window 11 shows the image represented by the image data S0. By selecting a desired menu and clicking the button 15A, the degree of the image processing effect according to the selected menu is increased by 1 step, while it is decreased by 1 step by clicking the button 15B. In this manner, the image window 11 shows an image on which the image processing corresponding to the selected menu and according to the degree having been set has been carried out. At this time, the input condition setting means 5 corrects an image processing amount per click of the buttons 15A and 15B, based on the color temperature of the monitor, the viewing environment, the resolution of the monitor, a visibility angle per dot, and the like. The corrected image is then displayed on the image window 11.

In this case, since the sensation expression for the image and the impression of the processing according to the sensation expression differ from person to person, the user inputs a degree of satisfaction with the image after processing after display of the processed image. By accumulating the data, differences between the sensation expressions by users and the content of the processing stored in the database 4A are learned. According to this learning result, the degree of the image processing and the content thereof may be changed when the image is displayed in the image window 11.

If the image displayed in the image window 11 is satisfactory, the user clicks the OK button 13. If the degree

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of the processing effect needs to be changed, the user changes the degree by clicking the button 15A or 15B. Once the OK button 13 is clicked, the script generating means 6 generates the general sensation expression script H.

The general sensation expression script H is a text file shown in Figure 3, for example. In the example shown in Figure 3, the content of the image processing to be carried out on an image is to increase the degrees of sharpness and cold by 10 and 15 points, respectively. The values of the general sensation expression script H are changed by how many times the button 15A or 15B has been clicked. For example, 5 points are gained by 1 click. The values do not include the correction amount according to the correction data generated by the input condition setting means 5. Therefore, the general sensation expression script H shows the degree of image processing according to the general sensation expression excluding the correction amount according to the characteristic of the monitor, the viewing environment, or the characteristic of the user.

The laboratory 2 comprises image processing means 7 for obtaining processed image data S2 by carrying out image processing on the high resolution image data S1 stored in the laboratory 2, output means 8 such as a printer for outputting the processed image data S2 or a recording apparatus for recording the processed image data S2 in a recording medium, and output condition setting means 9 for setting an output condition of the output means 8 upon image processing.

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The image processing means 7 has a database 7A storing the sensation expressions and the content of image processing related to the sensation expressions, as the database 4A of the editing instruction means 4. Based on the general sensation expression script H, the image processing means 7 carries out image processing on the image data S0 based on the general sensation expression script H with reference to the database 7A, and obtains the processed image data S2.

The output condition setting means 9 retains correction data for correcting a variance due to a characteristic of an output medium for the processed image data S2, an environment in which the processed image data S2 are viewed, the characteristic of the viewer, and the like. The image processing means 7 changes the degree of the image processing effect upon processing the image data, based on the correction data. For example, if the output medium is a white glossy mug, the content of the image processing is corrected so as not to increase the degree of "cold" even if the general sensation expression script H instructs an increase in "cold". This is because the output medium itself gives a cold impression. Upon printing of a photograph on glossy photographic paper, the content of the image processing is corrected so as not to increase the degree of "sharpness" or "cold" even if the general sensation expression script H instructs an increase in "sharpness" or "cold". This is because the output medium itself gives a sharp and cold impression. For the case of a matt print, the content

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of the image processing is corrected so as not to increase the degree of "softness" even if the instruction indicates an increase in softness, because the output medium itself gives a soft impression. Furthermore, when a plurality of photographs are printed on one sheet and photographs surrounding one photograph among the photographs are bright, the content of the image processing is corrected to increase the degree of "brightness" of the photograph much higher than the degree instructed by the general sensation expression script H. In this manner, the image does not look dull compared with the surrounding images. In this case, if the input condition setting means 5 has learned the characteristic of the viewer, that is, the user, the result of learning may be input to the output condition setting means 9 so that the degree of the image processing effect can be changed based on the result.

An operation of this embodiment will be explained next. Figure 4 is a flow chart showing the operation. The image generating/inputting means 3 obtains the image data S0 (Step S1), and inputs the data into the personal computer 1 (Step S2). The editing instruction means 4 instructs the editing for the image data S0 according to the sensation expression (Step S3). At this time, as has been described above, the degree of the image processing effect is changed based on the correction data retained by the input condition setting means 5 and the image having been subjected to the image processing is displayed in the image window 11 of the monitor. If the processing on the

image displayed in the window 11 is satisfactory (Step S4), the script generating means 6 generates the general sensation expression script H (Step S5), and transfers the script to the laboratory 2 (Step S6). The above is the operation carried out in the personal computer 1.

In the laboratory 2, based on the general sensation expression script H having been transferred thereto, image processing is carried out on the high resolution image data S1 stored therein, and the processed image data S2 are obtained (Step S7). At this time, as has been described above, the degree of the image processing effect is changed based on the correction data retained by the output condition setting means 9. The processed image data S2 are then output to a predetermined output medium by the output means 8 (Step S8), and the operation is completed.

As has been described above, according to the embodiment, image processing is carried out on the image data S1 based on the general sensation expression script H. Therefore, the processing excluding the variance of how an image looks depending on the editing environment such as the user to edit or the condition of viewing the monitor of the personal computer 1 can be carried out on the image data S1. In this manner, it is possible to obtain the processed image data S2 representing the image not affected by an impression of the image due to the editing environment.

Furthermore, since the image processing is carried out

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according to the output condition at the time of outputting the

processed image data S2, the processed image data S2 representing

the image having the same impression as the image at the time

of editing can be obtained by taking into consideration the

5   characteristic of the output medium, the viewing environment,

and the characteristic of the viewer of the output image.

In the above embodiment, the sensation expressions are

related to the content of image processing and stored in the

databases 4A and 7A of the editing instruction means 4 and the

10   image processing means 7. By referring to the databases, image

processing is carried out on the image displayed on the monitor

4B and on the output image. However, the image processing may

be carried out by using an image processing function having the

sensation expression as an argument. In this case, the image

15   processing function corresponding to the sensation expression

instructed by the general sensation expression script H is read

and the image processing is carried out according to the image

processing function based on a correction amount representing

the degree of the image processing effect set by the buttons

20   15A and 15B. Examples of a program using such image processing

functions are shown in Figure 5a and 5b. As shown in Figure 5a,

if the function is called by "shori(sharpness, 10), for example,

"sharpness" is the argument in the general sensation expression

script H and the amount of correction is 10. When the processing

25   according to a program shown in Figure 5b is carried out, if

an argument "kansei" is sharpness, a function "sharp" carrying

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out frequency enhancing processing is called and the processing is carried out according to a correction amount "ryou" 10. If the argument kansei is "softness", a function "yawarakai" carrying out frequency lowering processing is called and the

5   processing is carried out according to the correction amount "ryou".

In this case, if knowledge regarding the relationships between the sensation expressions and the content of image processing is improved and a function having higher performance

10   is obtained, the program can be upgraded easily by replacing the function such as "sharp()" and "yawarakai()" with a function having higher performance. In order to carry out more sophisticated processing depending on a computer type, functions enabling higher performance can be used and image

15   processing by the functions in accordance with the performance of the computer can be realized. By registering the functions in a dynamic link library (DLL), the functions can be replaced by exchanging the DLL.

What is claimed is:

1. An image processing method comprising the steps of:

instructing editing according to a sensation expression for an image;

generating a general sensation expression script based on the content of the editing instruction; and

obtaining processed image data by carrying out image processing on image data representing the image, based on the general sensation expression script.

2. An image processing method as claimed in Claim 1, wherein the image processing is carried out on the image data based on an output condition used at the time of outputting the processed image data.

3. An image processing system comprising:

editing instruction means for instructing editing for an image according to a sensation expression;

script generating means for generating a general sensation expression script based on the content of the editing instruction; and

image processing means for obtaining processed image data by carrying out image processing on image data representing the image, based on the general sensation expression script.

4. An image processing system according to Claim 3, wherein the image processing means carries out image processing on the image data, based on an output condition used at the time of outputting the processed image data.

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5. An editing instruction apparatus comprising:

editing instruction means for instructing editing for an image according to a sensation expression; and

script generating means for generating a general sensation expression script based on the content of the editing instruction.

6. An image processing apparatus comprising image processing means for obtaining processed image data by carrying out image processing on image data representing the image based on the general sensation expression script obtained by the editing instruction apparatus according to Claim 5.

7. An image processing apparatus as claimed in Claim 6, wherein the image processing means carries out image processing on the image data, based on an output condition used at the time of outputting the processed image data.

8. A computer-readable recording medium storing a program to cause a computer to execute the procedures of:

instructing editing for an image according to a sensation expression; and

generating a general sensation expression script based on the content of the editing instruction.

9. A computer-readable recording medium storing a program to cause a computer to execute the procedure of carrying out image processing on image data representing the image, based on the general sensation expression script obtained by the editing instruction apparatus according to Claim 5.

20

10. A computer-readable recording medium as claimed in Claim 9, wherein the procedure of carrying out image processing is a procedure of carrying out image processing on the image data, based on an output condition used at the time of outputting

5   the processed image data.

ABSTRACT OF THE DISCLOSURE

Image processing according to a sensation expression can be carried out regardless of differences in output media or viewing conditions. An editing instruction for image data is generated by editing instruction means in a personal computer according to a sensation expression such as "sharpness" or "softness". At this time, the content of image processing is corrected and according to a characteristic of a monitor of the personal computer by input condition setting means and displayed on the monitor. The result of the editing instruction is transferred to a laboratory as a general sensation expression script. In the laboratory, image processing is carried out on image data according to the general sensation expression script. At this time, output condition setting means changes the degree of image processing according to the characteristic of an output medium for processed image data and the like. The processed image data are then output by output means to the predetermined output medium.

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FIG.1

FIG.2

11

12

MENU ↓ ——14

△ ——15A

▽ ——15B

OK ——13
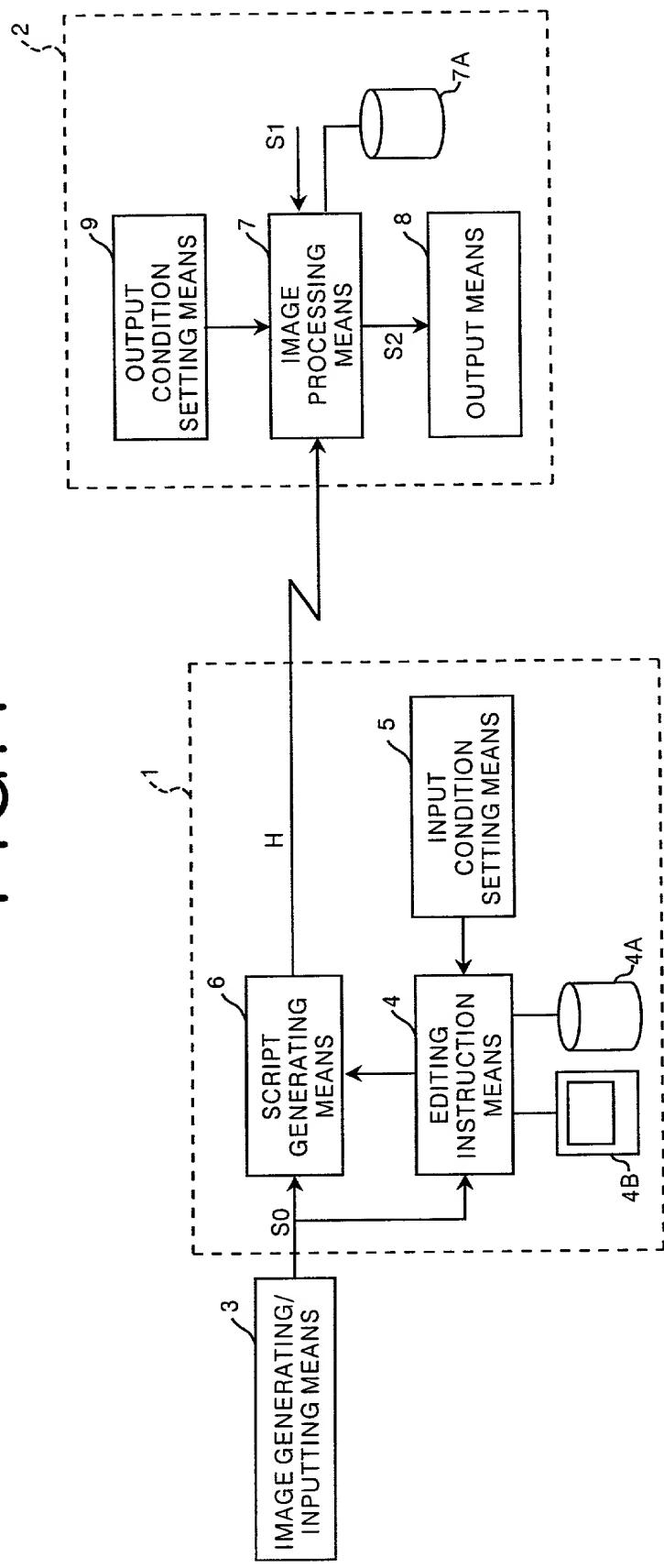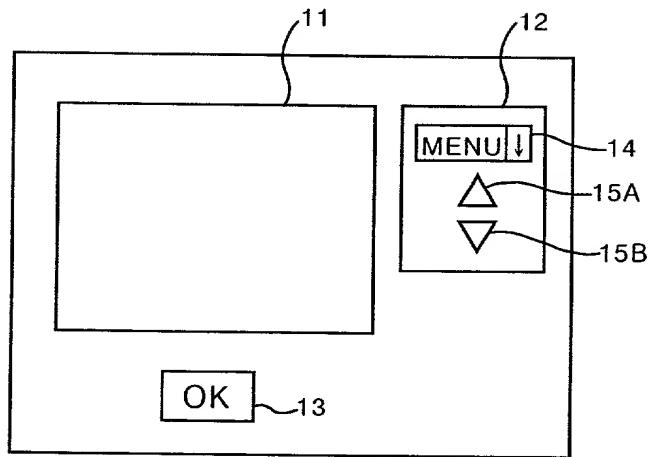
FIG.3

TARGET : IMAGE

SHARPNESS   +10

COLD   +15

FIG.4

START

S1
OBTAIN IMAGE DATA

S2
INPUT INTO PERSONAL COMPUTER

S3
INSTRUCT EDITING ACCORDING TO SENSATION EXPRESSION

S4
IS PROCESSING DEGREE OK?

NO

YES

S5
GENERATE GENERAL SENSATION EXPRESSION SCRIPT

S6
TRANSFER TO LABORATORY

S7
PROCESS IMAGE

S8
OUTPUT

END
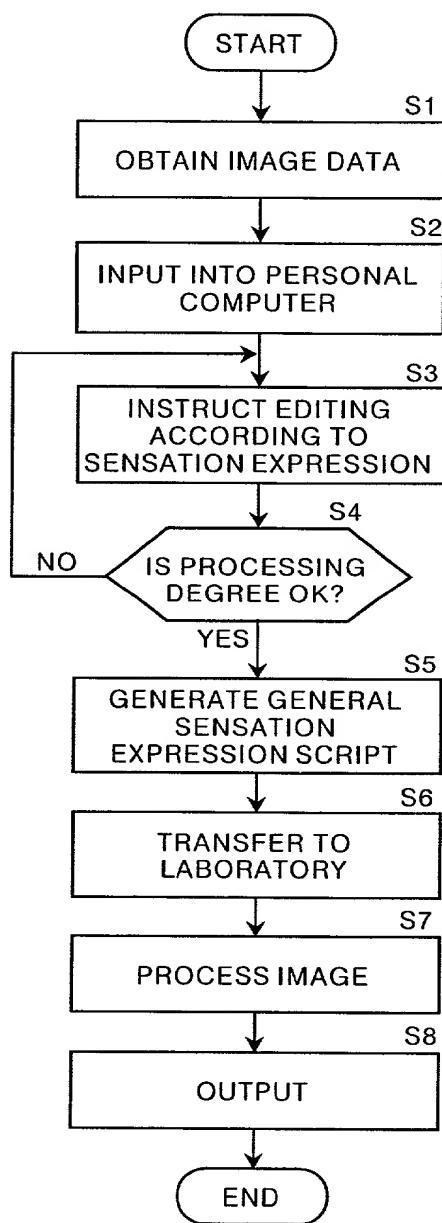
FIG.5a

shori (SHARPNESS, 10)

FIG.5b

```
shori (kansei, ryou)
   {
      switch (kansei) {
         case "SHARPNESS" : sharp (ryou) ; break ;
         case "SOFTNESS" : yawarakai (ryou) ; break ;
         ......
            }
   }
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Declaration and Power of Attorney For Patent Application

特許出願宣言書及び委任状

Japanese Language Declaration

日本語宣言書

下記の氏名の発明者として、私は以下の通り宣言します。

As a below named inventor, I hereby declare that:

Wataru Ito

私の住所、私書箱、国籍は下記の私の氏名の後に記載された通りです。

My residence, post office address and citizenship are as stated next to my name. c/o Fuji Photo Film Co., Ltd., 798 Miyanodai, Kaisei-machi, Ashigarakami-gun, Kanagawa-ken, Japan

下記の名称の発明に関して請求範囲に記載され、特許出願している発明内容について、私が最初かつ唯一の発明者（下記の氏名が一つの場合）もしくは最初かつ共同発明者である（下記の名称が複数の場合）信じています。

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

"METHOD, SYSTEM AND RECORDING

MEDIUM FOR IMAGE PROCESSING"

上記発明の明細書（下記の欄でx印がついていない場合は、本書に添付）は、

the specification of which is attached hereto unless the following box is checked:

☐ ＿月＿日に提出され、米国出願番号または特許協定条約国際出願番号を＿＿＿＿＿＿とし、（該当する場合）＿＿＿＿＿＿ に訂正されました。

☐ was filed on ＿＿＿＿＿＿＿＿＿＿＿
as United States Application Number or
PCT International Application Number
＿＿＿＿＿＿＿＿ and was amended on
＿＿＿＿＿＿＿＿ (if applicable).

私は、特許請求範囲を含む上記訂正後の明細書を検討し、内容を理解していることをここに表明します。

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

私は、連邦規則法典第３７編第１条５６項に定義されるとおり、特許資格の有無について重要な情報を開示する義務があることを認めます。

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

Japanese Language Declaration
（日本語宣言書）

私は、米国法典第３５編１１９条 (a) - (d) 項又は３６５条 (b) 項に基き下記の、米国以外の国の少なくとも一ヵ国を指定している特許協力条約 ３６５ (a) 項に基づく国際出願、又は外国での特許出願もしくは発明者証の出願についての外国優先権をここに主張するとともに、優先権を主張している、本出願の前に出願された特許または発明者証の外国出願を以下に、枠内をマークすることで、示しています。

I hereby claim foreign priority under Title 35, United States Code, Section 119 (a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)
外国での先行出願

Priority Not Claimed
優先権主張なし

(patent) 41444/1999	Japan	19/02/1999	☐
(Number) （番号）	(Country) （国名）	(Day/Month/Year Filed) （出願年月日）	
(Number) （番号）	(Country) （国名）	(Day/Month/Year Filed) （出願年月日）	☐

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I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below.

(Application No.) （出願番号）	(Filing Date) （出願日）	(Application No.) （出願番号）	(Filing Date) （出願日）

私は、下記の米国法典第３５編１２０条に基づいて下記の米国特許出願に記載された権利、又は米国を指定している特許協力条約３６５条 (c) に基づく権利をここに主張します。また、本出願の各請求範囲の内容が米国法典第３５編１１２条第１項又は特許協力条約で規定された方法で先行する米国特許出願に開示されていない限り、その先行米国出願書提出日以降で本出願書の日本国内または特許協力条約国際提出日までの期間中に入手された、連邦規則法典第３７編１条５６項に定義された特許資格の有無に関する重要な情報について開示義務があることを認識しています。

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s), or 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of application.

(Application No.) （出願番号）	(Filing Date) （出願日）	(Status: Patented, Pending, Abandoned) （現況： 特許許可済、係属中、放棄済）
(Application No.) （出願番号）	(Filing Date) （出願日）	(Status: Patented, Pending, Abandoned) （現況： 特許許可済、係属中、放棄済）

私は、私自身の知識に基づいて本宣言書中で私が行なう表明が真実であり、かつ私の入手した情報と私の信じるところに基づく表明が全て真実であると信じていること、さらに故意になされた虚偽の表明及びそれと同等の行為は米国法典第１８編第１００１条に基づき、罰金または拘禁、もしくはその両方により処罰されること、そしてそのような故意による虚偽の声明を行なえば、出願した、又は既に許可された特許の有効性が失われることを認識し、よってここに上記のごとく宣誓を致します。

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Japanese Language Declaration
（日本語宣言書）

委任状： 私は下記の発明者として、本出願に関する一切の手続きを米特許商標局に対して遂行する弁理士または代理人として、下記の者を指名いたします。（弁護士、または代理人の氏名及び登録番号を明記のこと）

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith *(list name and registration number)*

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（第三以降の共同発明者についても同様に記載し、署名をすること）

(Supply similar information and signature for third and subsequent joint inventors.)